

## NEBC MEETING NEWS

**November 1997.** Dr. Stephen Spongberg of the Arnold Arboretum spoke on the topic "New Plants in Yankee Soils—An Abbreviated History of Plant Introduction from Eastern Asia." Steve began with an overview of the floristic diversity and complexity of eastern Asia. China, while roughly the same size as the continental U.S. and at the same latitudes, contains three times the diversity of vascular plants, with a reported flora of over 30,000 species. The natural floristic relationships between eastern Asia and eastern North America were noted first by Linnaeus in 1750 and were rediscovered independently by Asa Gray a century later. Steve's topic, however, was the history of eastern Asian natives now cultivated in North America—a history influenced by religion, politics, and commerce more than by science.

Introductions from eastern Asia began in the 1750s, when the Dutch were able to import seeds of *Ginkgo* from China, where the tree existed only in cultivation on temple grounds. Jesuit missionaries, allowed to establish a mission in Beijing, sent back *Sophora japonica*, *Koelreuteria*, and *Ailanthus*, presumably with good intentions. After the end of the Opium Wars in 1842, when China's treaty ports opened to foreigners, the Horticultural Society of London sent Robert Fortune to seek botanical novelties. Although limited to the treaty ports and Chinese garden flora, Fortune was responsible for the introduction of numerous Asian cultivars of *Chrysanthemum*, *Camellia*, peonies, and the ubiquitous *Dicentra spectabilis*, as well as woody ornamentals including *Hydrangea paniculata*.

A Bavarian physician and botanist, Philipp von Siebold, was responsible for collecting a tremendous number of Japanese plants, despite being confined to the Dutch trading settlement on the island of Deshima. With George Rodgers Hall, a Harvard-trained doctor, he successfully introduced *Malus floribunda*, *Rosa rugosa*, *Rhododendron brachycarpum*, *Magnolia sieboldii*, *Wisteria floribunda*, *Taxus cuspidata*, and *Lilium auratum*. Hall's garden, still intact at his home in Bristol, Rhode Island, contains his original plant of *Taxus* brought back from Japan in 1865.

The British nurseryman, James Veitch, began to send collectors to China in the late 1800s, most successfully Ernest Wilson. Wilson was the first to collect live material of *Davidia involucreata* and, on his second expedition, *Meconopsis integrifolia*. Charles

Sargent visited Japan in 1892 and successfully introduced *Malus sargentii*, *Prunus sargentii*, and *Rhododendron kaempferi*. In 1905, Sargent hired Wilson and sent him to China, Japan, and Korea on a series of collecting expeditions. Wilson's accessions included *Forsythia ovata*, *Corylopsis*, *Magnolia sargentii*, *Cornus kousa*, *Kolkwitzia*, *Stewartia*, *Acer griseum*, and *Lilium regale*. Wilson's collecting career ended with a severely broken leg, although this adventure resulted in his being the only botanist known to have been featured in *Ripley's Believe It or Not*.

The most recent eastern Asian introduction is *Metasequoia glyptostroboides*, the "dawn redwood," collected by Elmer Merrill, Director of the Arnold Arboretum, almost exactly fifty years ago, on January 3, 1948. Following Merrill's expedition, China essentially became closed to foreigners again until after Nixon re-established relations. The first joint Sino-American Botanical Expedition was held in 1980, and this collaboration continues with preparation of the first *Flora of China*.

**December 1997.** Dr. Harlan Banks spoke on "Sixty Years with Devonian Plants," an enthusiastic review of his more than 60-year-long romance with the early vascular plants of the Devonian. During the evening, Dr. Banks took the Club on a whirlwind tour of the people, places, and fossil plants that have contributed to our current understanding of the early land plant record.

The early land plants underwent a rapid and remarkable evolutionary radiation in the period from 400 to 350 million years ago, and developed two major lineages early in the Devonian—the Psilopsida (leafless plants with terminal sporangia) and the Zosterophylloids. Dr. Banks's primary work has contributed to making sense of this diversification, particularly with the zosterophylls, the early ancestors of the lycopods. These plants had simple leaves with single, unbranched vascular strands, sporangia on the upper surface of the leaves, and a unique xylem structure, and probably looked much like *Lycopodium selago*.

The plants provide a fascinating view of diversity, and Dr. Banks shared the thrill of each new discovery: the 3-forked leaves of *Colpodexylon* (formerly thought to be spines); *Leclerqia*, with its uniquely distinctive 5-forked leaves; other taxa with curved, falcate leaves with broad deltoid bases; *Sawdonia*, from the Gaspé, the first of these plants demonstrated to have stomates on the leaves and sporangia borne directly on the sides of the stems; and

*Psilophyton*, from the Devonian of Wyoming, found to have clusters of terminal sporangia. The careful study of these plants has also provided evidence of Devonian arthropods, based on scars similar to those that result from modern chewing or sucking insects, and the earliest record of a spider based on fossil material trapped in the leaves of *Leclerqia*.

**January 1998.** Ten members stepped forward to share their slides and tales of botanical explorations throughout the world. George Newman traveled to the Bruce Peninsula of Ontario, and to a spectacular marl bog near Lake Huron, where *Pinguicula* covers acres. George also pursued *Sarracenia* in the Okefenokee Swamp, despite the occasional hazards of alligators and water moccasins. Don Lubin traveled no further than his yard in Allston, where he cultivates more than 30 species of ferns. Don brought ferns grown from spores to share with other Club members, and invited members to visit his garden if summer ever returns to New England. David Hunt confined his travels to New York state, but visited numerous unusual and unique communities in the Adirondacks and coastal oak forests. The sloping acidic fens which support alpine sedges and rare sphagnums, although below treeline, were perhaps the most intriguing of these communities. Paul Somers shared slides of the Club's June and September field trips, and unusual plants from the southern Appalachians. Pam Weatherbee visited southern Illinois, where floodplain forests, limestone outcrops, and rich woods support a wealth of spring-flowering species, including *Trillium flexipes*, *T. recurvatum*, and *Collinsia verna*.

The western United States was represented by Leila Schultz, who described testing a new GIS-based predictive model for rare species habitats and a new species richness map prepared for Utah. Field investigation of one locality predicted to contain rare species found that the model worked even better than anticipated, when the team discovered a new species of *Eriogonum*! Lisa Standley shared slides of the colorful flora of the East Mojave National Preserve in California, including Joshua trees and the spectacular Mojave mound cactus.

Three Club members traveled even further afield. Dorothy Andrews traveled up the Rio Negro from Manaus, observing life in and along the river. Unfortunately, Dorothy's trip coincided with an unusual prolonged drought, which resulted in few flowers,

fruits, or birds along the river, and a complete absence of howler monkeys. Ray Angelo visited the Singapore Botanical Gardens, encountering kapok trees, orchids, and figs. Ray also demonstrated that he had successfully eaten durians. Barre Hellquist shared pictures from his sabbatical in Australia, including the vast opium fields of Tasmania. Barre focused on the newly discovered "Wollemi Pine," a species of *Araucaria* formerly known only from the fossil record, and recently found to occur in the Wollemi National Park north of Sydney, with a population of only 38 individuals.

**February 1998.** Barre Hellquist, of North Adams State College, spoke on "Aquatic Plants of Australian Billabongs, Gilgais, and Backwaters." Barre recently returned from a 6-month sabbatical at the Royal Botanical Gardens in Sydney, where he worked on the Flora of Australia project. Barre's research work in Australia focused on *Aponogeton*, a genus of (mostly) submerged tropical aquatics with broad, linear leaves and small, undistinguished flowers. Barre succeeded in complicating the Australian flora by turning the 4 known native species into 10 taxa, some of which are distinguished only by seed characters. In his travels through the wetlands of northern Australia (the billabongs and gilgais), Barre and various companions saw an incredible number of *Nymphaea* species: *macrosperma*, which has very large leaves and seeds, but tiny flowers; *pubescens*, the only night-bloomer; *violacea*, *immutabilis*, and *atrans*, which have blue or lavender outer petals and white inner petals; *ellenii*, a dwarf white flower; *rubra*; and *gigantea*, whose populations vary in flower color from lilac to pink and deep purple. *Nymphaea atrans* flowers undergo a spectacular color sequence, initially blue and white, aging to a deep pink.

Tropical Australia supports a wide diversity of aquatics. Barre introduced Club members to numerous species of *Nymphoides*, some with yellow flowers; *Caldesia*, a member of the Alismataceae with leaves that mimic water-lilies and fruits that mimic *Trapa*; *Monochoria*, a lovely purple-flowered genus related to *Pontederia*; *Ottelia*, a showy member of the Hydrocharitaceae, as well as the more familiar genera *Utricularia*, *Eriocaulon*, *Vallisneria*, *Triglochin* (some species look like *Vallisneria*), *Limosella*, and, of course, *Potamogeton*.

—LISA A. STANDLEY, Recording Secretary.